

J. C. POWELL

University of Windsor

D. J. COTTRELL

Workmen's Compensation Board

and

MARGARET LEVER

Board of Education, Windsor

Schools I Would Like to See: An Opinion Survey Instrument With Interesting Possibilities

Following a suggestion by Carlton (1974), and using as a starting point the goals for education reported by Spears (1973), a 24-item opinion survey was developed. The survey requires the selection of the four most important and the four least important goals from the list. A complex scoring procedure derives seven largely independent scales from these eight responses. Although the list of goals is not exhaustive, it has been found that this set of goals and the underlying construct upon which they were developed form a necessary and sufficient set to satisfactorily characterize the general approach to education among most populations. Reliabilities are high enough for some use in individual attitude assessment on most of the scales. Among other findings, a four-level Maslow-like hierarchy was detected to form one scale. This scale did not validate as a construct with Shostrom's POI (1966). Some examples of the use of the opinionnaire are reported and several suggestions for possible research use are made. (Dr. Powell is Associate Professor of Educational Psychology at the University of Windsor; Mr. Cottrell is a vocational rehabilitation counselor for the Ontario Workmen's Compensation Board in Toronto, and M.Lever is Computer Liaison Officer for the Board of Education in Windsor.)

Carlton (1974) reviewed the literature on schooling and reported seven different images commonly held by theorists in education: (1) The Familial Model, (2) The Political Model, (3) The Economic Model, (4) The Religious Model, (5) The Collegial Model, (6) The Custodial Model, and (7) The Community Model.

This paper reports the development of an instrument designed to empirically validate these seven models and an additional one, (8) The Humanizing Model, as a necessary and largely sufficient set of approaches to education to accommodate most people's views of what purposes education should serve. These eight models are first described in summary form and the procedure used to develop the instrument and its general characteristics is discussed. Following this, the results of initial attempts at determining the validity and the reliability are presented and a brief overview of some of the research outcomes is given. The paper concludes with a synopsis of the effectiveness of the instrument to date and some suggestions for research and other uses for which it might be employed.

Description of Models

Consideration is given to these models in the order Carlton (1974) discusses them. The description of each model, as follows, is abridged from Carlton's discussion and is then summarized in terms of goal expectations.

1. *The Familial Model.* In this model, "custom and consensus are reinforced through consistency of socialization across home and school: change may be valued or even encouraged, but only along lines which amplify rather than challenge the established order" (p. 62). A person supporting this model would be expected to favour an emphasis upon extrinsic rather than intrinsic motivation, to encourage social as contrasted with individual responsibility, and to encourage learning for use in society.
2. *The Political Model.* "The political school emphasized its linkages with all levels of government, ... [e]ffective political socialization, ... [a]ppropriately edited curricula ... [to] enhance the adaptive and reproductive functions of the school, ...[without] challenge [to] the rightness of established order" (p. 64). The person who supports this political point of view would be expected to favour emphasis upon extrinsic motivation in terms of one's responsibility to the state, the development of an informed citizenry, and the suppression of personal needs and goals in favour of collective needs and goals.
3. *The Economic Model.* In this model, "economic norms govern the enterprise ... schools are drawn into competition... differentiation of the training [and the products] offered" (p. 66). In a phrase, students are sensitized to their market value. The person who favours this model for schooling would expect the school to focus upon the competitive development of vocational competence, the pursuit of economic rewards, and personal development through self-initiative.
4. *The Religious Model.* A school in this model "has behind [it] the full weight of spiritual and ecclesiastical authority ... Linkage to the church is ... immediate and direct... [Such a school is] protective of the status quo [and] inner directed" (pp. 67, 68). The person who favours such an approach to schooling would place a strong emphasis upon moral and ethical or spiritual values in an attempt to heighten self-criticism for the development of inner directed (intrinsic) motivation. An emphasis upon traditional learning and upon acquiescence to persons in authority would also be evident.

5. *The Collegial Model*. "The collegial school is client-centered, but ... ensures the regeneration of the elite ... The authority system ... is hierarchical by expertise ... [and] the education of recruits to a discipline is regarded as ... vital" (pp. 69, 70). Thus the adherent to this approach to schooling would be expected to favour interpersonal competition, academic excellence, and individual initiative tempered by logic and supported by evidence.
6. *The Custodial Model*. "Entry to a custodial school is [prescribed] ... teacher-student relationships take on much of the character of staff-inmate interactions ... reinforced psychologically by depersonalized tactics ... behavioral control [and] humiliation ... [and] the continued denial of personal competency through external regulation. [This assumed in- competency] functions to legitimate the need for custody" (p. 71). The supporter of the custodial approach, viewing the learner as incompetent and education as therapeutic, would be expected to favour strong discipline, focus upon basic intellectual skills, and an emphasis upon the responsibility of the individual for his or her own behaviour.
7. *The Community Model*. In this model, "[E]ducational aims are not set by a single group or organization; rather, each pursues his own goals in conflict or cooperation with others similarly self-directed ... objectives are... set by those who pursue them" (pp. 72, 73). A person who would support this model would be expected to favour the development of collaborative action for the common good.

When examining these seven models in the light of the descriptions Carlton gave and the secondary comments provided here, it became apparent that a three-dimensional system could be used to organize all seven models into a single system. Table 1 gives this organization.

This system organizes these models in the following dimensions:

TABLE 1
A THREE-DIMENSIONAL SYSTEM ACCOMMODATING
CARLTON'S MODELS

School Model	Dimensions		
	I Approach to Motivation	II Approach to Information	III Approach to Authority
1. Familial	Extrinsic	Doing	Consensus
2. Political	Extrinsic	Knowing	Consensus
3. Economic	Intrinsic	Doing	Individual
4. Religious	Extrinsic	Knowing	Consensus
5. Collegial	Intrinsic	Knowing	Individual
6. Custodial	Extrinsic	Knowing	Individual
7. Community	Intrinsic	Doing	Consensus
8. Humanizing	Intrinsic	Doing	Individual

- I. *Approach to Motivation* which refers to whether the model sees the learner's rewards for progress as coming from within (Intrinsic) or from some external source (Extrinsic).

- II. *Approach to Information* which refers to whether or not information is taught for its intrinsic value (Knowing) or its utilitarian value (Doing).
- III. *Approach to Authority* which refers to whether or not the ultimate authority for the right to act is vested in society, tradition or other external consensus-based foci (Consensus), or within the personal responsibility of the individual to operate in society with the authority of personal competence and conviction backed by reason and evidence (Individual).

Once these seven models were established within this framework, it became evident that an eighth model was needed to complete the system. The missing model was intrinsically oriented in the Motivation dimension, action oriented in the Information dimension, and personal responsibility oriented in the Authority dimension. Recent literature concerning attempts to "humanize" the schools would seem to reflect these characteristics, thus the suggestion for the name of the eighth model.

- 8. *The Humanizing Model.* The person who supports this model would be expected to favour educational goals which advocate the development of individual self-competitive initiative with a focus upon the individual's responsibility to deliver a high level of personal service to others.

Viewed from this perspective, it seems reasonable to suggest that Carlton was rather hard on the Custodial Model, and that each of these models have a functional value in the appropriate circumstances. Criticism of any model may arise philosophically from any person holding an alternative view, or pragmatically from the inappropriate application of that model.

At this point, Table 1 may be regarded as a hypothetical construct with respect to the goals for education. It captures some, but not all, of the major conflicting points of view held concerning the purposes of schooling. The authors, intrigued and challenged by this construct, decided to test its viability empirically.

TABLE 2¹
LIST OF GOALS FROM KAPPAN SURVEY

-
- 1. Develop skills of reading, writing, speaking and listening.
 - 2. Develop pride in work and a feeling of self-worth.
 - 3. Develop good character and self-respect.
 - 4. Develop a desire for learning now and in the future.
 - 5. Learn to respect and get along with people with whom we live and work.
 - 6. Learn how to examine and use information.
 - 7. Gain a general education.
 - 8. Learn how to be a good citizen.
 - 9. Learn about and try to understand the changes that take place in the world
 - 10. Understand and practice democratic ideas and ideals.
 - 11. Learn how to respect and get along with people who think, dress and act differently.
 - 12. Understand and practice the skills of family living.
 - 13. Gain information needed to make job selections.
 - 14. Learn how to be a good manager of money, property and resources.
 - 15. Practice and understand the ideas of health and safety.
 - 16. Develop skill to enter a specific field of work.
 - 17. Learn how to use leisure time.
 - 18. Appreciate culture and beauty in the world.
-

¹ Spears (1973)

There are many lists of educational goals in the literature, but Spears' (1973) report of the goals questionnaire listing 18 such objectives, circulated among 1,020 Kappans was of particular interest because so many of them could be fitted into the same models as those presented in Table 1.

To complete a list of goals which had one representative for each model in each of the three dimensions would require 24 goals, so that Spears' list was nearly enough. Table 2 gives the lead statements of each of the 18 goals in Spears' list. The statements circulated were actually more elaborate than this.

For present purposes, consensus among several people as to the placement of each of these goals was used, and six more goals, designed to fill the empty spaces with statements appropriate to the model and dimension, were added.

TABLE 3
GOALS LIST FROM FINAL VERSION OF
"SCHOOLS I WOULD LIKE TO SEE"

1. Develop a capacity for action based on knowledge.	13...Develop ability to trust our own judgment.
2. Develop a pride in our work and in our status in life.	13. Develop skills for innovation.
3. Develop a sense of group solidarity.	14. Learn to manage money and other resources effectively.
4. Learn to respect and get along with others.	15. Understand and practice ideas of health and safety.
5. Develop skills for continued learning.	16. Learn to cooperate with people holding viewpoints which differ from ours.
6. Learn how to manage information.	17. Appreciate culture and beauty.
7. Develop skills of self-exploration.	18. Develop self-initiative.
8. Learn the rewards of good citizenship.	19. Develop an abiding set of spiritual and moral values.
9. Learn to use leisure time effectively.	20. Recognize and accommodate the differing needs of others.
10. Understand the changes in the world	21. Accept our own short-comings.
11. Understand and practice democratic principles.	22. Learn to accept the authority of people in positions of responsibility.
12. Understand and practice family living skills.	23. Learn about and understand the interdependence of people. In positions of responsibility.
	24. Learn about and understand the inter-dependence of people.

© Canadian copyright number 260567-111, June 1975, by J. C. Powell, Windsor, Ontario, Canada. (Reproduced with permission.)

The initial validation attempt revealed that the three R's goal (No.1) was rated first by nearly everyone, reducing the discriminating power of all items. Two other goals were correlated with others in the list implying that these two were not identifying unique components. These three were replaced so that the complete list ultimately contained 15 from Spears, and nine new statements of goals. Several of the statements were slightly reworded to accommodate these construct placements.

Having everyone rank order all the goals (as done in the Spears report) proved to be time-consuming and of low test-retest reliability. Alternatively it appeared that support for one pole of any dimension suggested the rejection of the opposite, implying a forced choice procedure. If these goals represented a continuum, then the highest and lowest goals chosen from this set might be sufficiently representative of a person's value to give an adequate picture of the views of education held by that person.

The choice of four high and four low goals from the total set proved to be the most reliable (in a test-retest sense). Three, five, and six alternatives were also tried but all had lower reliabilities, six being the lowest. The rank-order with the high or low choices proved to be less reliable than the simpler "most important" and "least important" designations. Four at each end out of 24 represented greater removal than one standard deviation from the mean.

The final version of the instrument was composed of the 24 goals for education listed in Table 3. The title given the list was, "Schools I Would Like to See" and the respondent chose eight of these: four most important and four least important as seen by him. The instrument took less than 10 minutes to administer and mark sense sheets were easily used.

Validation Procedures

Several forms of validity were considered, the first being content validity. All were goals for education, but there was the possibility that two or more of the respondents saw them as so similar that they did not discriminate the entire model. To resolve this issue, a principal components analysis procedure was used ($N = 242$) to determine the independence of each goal. None of the goals correlated significantly and the lowest loading for any item upon its own component was satisfactorily high ($+ .63$); most were $.80$ or higher.

The second form considered was concurrent validity. To obtain this validity, the 15 goals which overlapped with Spears' list were rank ordered by assigning $+1$ for "most," $+5$ for middle (unselected) and $+9$ for "least," on the basis of the average rank assigned. This rank order was then correlated with the rank order found by Spears. This correlation was very high ($r = .95$). This time the sample size was larger ($N = 450$). The single major departure was the goal relating to "democratic principles" (Table 3, No. 11). This was seventh out of the 15 from Spears' results, and eleventh out of 15 here. Since Spears reported a survey in the United States and the sample used here was of university students in Canada, this difference may well be a systematic difference arising from the characteristics of the two populations. It was gratifying to find such a simple instrument would be so sensitive to differential effects.

The third validity considered was construct validity. The first concern was to determine whether or not the three assumed dimensions would be found among these data. The cluster analysis procedure in the BMD package (which is related to Guttman's 1944 *Simplex*) was used. The diameter algorithm in this procedure produced three eight-member clusters that, except for the misclassification for six.

IV. *Approach to People.* The maximizing algorithm produced two clusters of 12 members each. One contained goals mostly people- and self-oriented. The other 12 were things-and ideas-oriented. Because of this polarity, this scale was called Approach to People (People-Things). A few items in this scale seemed oddly out of place. For instance, the "group's solidity" item (Table 3, No. 3) appeared in the "Things" pole. Attempting to change them had a devastating effect upon reliability. An interesting research topic would be to explore the implications of these peculiarities.

V. *Approach to Development.* The minimizing algorithm produced three clusters of approximately six items, with each of the others standing by itself.

Examination of the item components of these clusters suggested a four- part scale reminiscent of Maslow's (1968) hierarchy:

Level 1. Relating world to self. These goals suggest a tendency to an egocentric, self-protective approach to education. (Example: Develop skills of self-exploration.)

Level 2. Relating self to world. These goals suggest a tendency for an outward looking view of education constrained by rather short temporal and special frameworks. (Example: Learn the rewards of good citizenship.)

Level 3. Competent functioning. These goals suggest a tendency toward an inward self-critical approach leading to an outward stress on the competitive development of competence. (Example: Develop skills for continued learning.)

Level 4. Mediative outreach. These goals seem to suggest a tendency toward attempts of the individual, on a self-competitive basis, to extend oneself beyond oneself. (Example: Develop skills for innovation.)

The poles seemed to be Self-protection and Self-development.

Scale IV added a fourth area in which controversy has occurred (the people-things dichotomy) and scale V added a possibility of studying Maslow's theories in an educational context.

VI. *School Model Supported.* These two new scales proved helpful in an additional approach to construct validity which was attempted. In this procedure, the three "most important" choices representative of each school model were used as a starting point. The most common fourth choice found to go with at least two of these three was taken as expected choice number four. By using consensus among a group of raters as to which three alternatives a supporter of each model would be most likely to reject, and the most common rejection not in this list, four "least important" choices for each model were also assigned. In this manner a unique "ideal" profile was obtained for each model. These "ideal" profiles were scored as though they were actual selections produced by someone who had responded to the instrument.

TABLE 4
COMPARISON BETWEEN EXPECTED AND OBSERVED
"IDEAL" VALUES OF THE CONSTRUCT

School Model	Expected Dimension Direction			Observed Dimension Direction			Proportion of Occurrence (N = 1423)
1. .Familial	-ve	+ve	-ve	-2	+2	-2	0.03
2. Political	-ve	-ve	-ve	-3	-2	-3	0.04
3. Economic	-ve	+ve	+ve	-2	+1	+3	0.12
4. .Religious	+ve	-ve	-ve	+1	-2	-1	0.07
5. Collegial	+ve	-ve	+ve	+3	-1	+2	0.130
6. Custodial	-ve	-ve	+ve	-2	-1	+3	0.03
7. Community	+ve	+ve	-ve	+2	0	-2	.0.08
8. Humanizing	+ve	+ve	+ve	+3	+2	+3	0.20
9. Undetermined	Score show at least one zero						0.30

1.00

With the scores for the first three dimensions in hand, a comparison could be made from these scores with the expected signs of the scores from Table 1 in the original construct. For scaling purposes, Extrinsic, Knowing, and Consensus poles were taken as negative.

In Table 4 only the Knowing-Doing dimension for the Community Model does not agree with the construct. Twenty-three out of 24 (96 percent) fitted the construct. The original hypothetical system seems to be strongly supported by this procedure, as these eight categories seem to form a necessary set for describing any population.

To establish whether or not this construct containing these eight models forms a sufficient set, 1,423 high school students were scored using a profile matching procedure which involved classifying the respondent as support-ing a particular school model. Three or more choices had to agree with the "ideal." Preference was given to the "most important" set in an ambiguous case. If the ambiguity remained or if less than three could be matched, the person was included in a ninth "undetermined" group. For the classification system to be sufficient, 40 percent or less should be in the undetermined group. This percentage is derived from the fact that a three-dimensional set with three levels rather than two would have 27 categories rather than eight. Thus, a larger number of undetermined respondents would suggest that the system could not describe any population. Table 4 also gives the validating sample results. There is 30 % in the "undetermined" category. In no case within several studies has there been more than 40

percent undetermined. In no case within several studies has there been more than 40 percent undetermined. Hence, the construct would seem to be supported as "sufficient." This profile matching supplied a sixth scale (this time a nominal scale) for the instrument which identifies which of the eight models the respondent would seem to *support*

III. *Approach to Education*. A seventh scale was also developed. The procedure in this case was to plot the "ideal" profiles on their scores for scales IV and V on a grid. The principal diagonal (through quadrants and was drawn and the distance from the origin of the orthogonal projection of these points to the diagonal was determined. This gave a scale value for each school model on a dimension which has a *people-things* relationship in one direction and a *self-development, self-protection* relationship in the other. Scale VII, because of the concepts it related, was classified as an "Approach to Education" dimension with poles "Open- and "Closed-mindedness." The dimension gives one possible operational definition of Openness in education, making possible an alternative empirical approach to yet another controversial area in education. The various school models can be defined on the scale in accordance with their "degree of openness" with a *people to self-development* orientation being "open" and *things to self-protection* orientation being "closed" (liberated-alienated, if you prefer). To get a score for respondents, the orthogonal projection of their plotted position on scales IV and V is averaged with the value of the scale score for the "ideal" school model with which they were identified. Those in the undetermined groups were given an "ideal" score of zero. This latter value does not affect the sign of the projected value, only its magnitude. A reasonable approach for people who are "on the fence," so to speak.

TABLE 5
"IDEAL" SCORES FOR THE EIGHT SCHOOL MODELS
ON SCALES IV, V, AND VIJ^b

School Model (VI)	Scales		
	IV	v	VII
1. Political	-4	-3	-5
2. Custodial	-4	-2	-4
3. Community	-2	-1	-2
4. Religious	0	-2	-1
5. Economic	0	+1	+1
6. Familial	+6	+1	+5
7. Humanizing	+4	+3	(+5) +6b
8. Collegial	+2	+9	+8

a School models are arranged in order of their values on scale VII.

b Humanizing was given a +6 value to distinguish it from the Familial Model in the scoring program. This choice was made because all scale values were positive for the Humanizing Model and not for the Familial Model.

Table 5 shows the "ideal" scores for each model in scales IV, V, and VII, half the models closed and half open, with scale V being the most influential. It is not surprising to find Custodial and Religious models Closed nor Economic, Familial, Humanizing and Collegial models open. To find the Community models closed seems strange in the light of all the favourable publicity it has received. To find the Political model the most closed of all, though unexpected, would seem to be both reasonable and enlightening. Since the typical teacher tends to be nonpolitical, the finding that a sample of 242- teacher trainees tended to be open and contained no adherents of the Political model among them is not surprising.

Thus, in a construct validity basis, the instrument appears to make sense. Further evidence in support of the construct validity of particular scales will be reported later. Predictive validities have yet to be examined although studies are in progress in this latter area.

Reliability

With respect to the reliability of the test, once again several approaches were used. First, the principal components analysis accounted for .84 of the variance which suggests a high internal consistency. Second, test-retest correlations were obtained collected from several administrations with different scoring procedures. The highest reliabilities were found under the following conditions:

1. Scales I, II, and III were rearranged to fit the *a posteriori* cluster analysis pattern.
2. Scale IV was also most reliable as found in the cluster analysis. Exchanges of alternatives which seemed logically to be out of place (such as Group Solidarity among the Things Oriented) destroyed the correlation.
3. Scaling Level 1, as -2 and Level 4 as +2 in dimension V improved the reliability of that dimension.
4. Choosing the four most and four least important gave the highest test-retest reliabilities. Either more or fewer alternatives in these two sets proved less reliable. Also, treating *most* and *least* as single categories proved more reliable than using rank ordering within these categories.
5. Since scale VI is a nominal scale, the proportions of equivalent classification from one administration to another was used as a variance estimate, the square root being the reliability estimate.
6. An alternative form involving easier language for administration to younger children is under development; alternate form reliabilities will be available at a later date.

The results of the best reliability estimates ($N = 16$) are given in Table 6.

TABLE 6
TEST-RETEST RELIABILITIES ($N = 16$)

Dimension		Composite
I	0.53	0.74
II	0.48	
III	0.81	
IV	0.81	
V	0.78	
VI	0.83 ^a	
VII	0.48	

^a Not a correlation

It should be remembered that the first three dimensions accommodate only eight alternatives each. Since the respondent chooses only eight, these scales are based upon an average of $2\frac{2}{3}$ responses in each scale. To get the overall stability for these three scales, the Spearman Brown formula was applied to the geometric mean of the three reliabilities. This procedure is the origin of this 0.76 composite value. As indicated in Table 6, the reliability of scale VI is not a correlation; sixty-nine percent (11 out of 16) respondents reclassified into the same model on the second administration. Since the square root of .69 is .83, this figure is reported.

Since scale VII is a composite scale of all other scales, its highest possible value would be the product of the three primary components used to make it the composite of scales I, II, and III along with scale IV and V. This expectation is met exactly ($.76 \times .81 \times .78 = .48$).

Table 7
INTERCORRELATION AMONG THE SEVEN SCALES IN
INSTRUMENT

Scales	II	III	IV	v	VI	VII
I	0.13	0.06	0.02	-0.07	a	0.34
II		-0.19	0.27	0.13	-0.15	0.02
III			-0.34	-0.35	0.11	-0.28
IV				-0.11	0.18	.0.21
v					-0.33	0.24
VI						<i>0.73</i>

Table 7 gives the correlations between the seven scales ($N = 24$). Only three correlations are significantly different from zero, two of them in Scale VI. Scale VI. The correlation of .73 between scale VI and scale VII can be explained in that 50 percent of the value assigned to scale VI is used to produce scale VII. Aside from this, scale IV also contributes significantly to scale VII, suggesting that the people-things orientation is the most potent determinant of Openness or Closed-mindedness. This is a pattern which makes sense.

The other significant correlation, Scale I (Motivation) with Scale VI (School Model) suggests that Closed School Models tend to rely upon Extrinsic motivation and Open School Models tend to encourage Intrinsic motivation. This observation is not only sensible, but adds fuel to the controversy over the use of Behavior Modification procedures. These procedures stress Extrinsic motivation which is probably entirely appropriate in a therapeutic (Custodial) setting and by the transcendence of the State over the individual Political Setting. The relationship of Extrinsic motivation to the Community and Religious settings is uncertain. Both favour Intrinsic motivation in the model. Also, both the Economic and Familial models appear to support Extrinsic motivation (money and family name respectively). Only 18 percent of the variance is involved. One cannot overgeneralize, but the observation is intriguing and could bear further investigation. Because of the dependency relationship between scales VI and VII, these two scales should be interpreted separately.

Details of the scoring procedure are available in Powell (1975). The administration of this opinionnaire is quick and easy. Scoring, however, is too complex for convenient hand scoring in any quantity. A computer scoring program is available.

Application Studies

The discussion which follows considers the validity and reliability data first. Then the results of the application of scale VI (the eight models) to several different groups are discussed. Third, the implications of using combinations of the six other scales are also considered.

Basically, four different studies are considered. These involve (i) about 900 students using a test-retest administration in a college of education and subgroupings thereof; (ii) about 70 teachers and 1,400 students in a secondary school involving a single administration; (iii) all staff members in a residential school for disturbed adolescent girls, and (iv) a group of 24 adults who took the Personal Orientation Inventory (POI) (Shostrom, 1966).

Implications of Validity and Reliability

The validity studies are primarily of a construct nature and the general construct seems to be supported. The reliabilities are high for a procedure which requires only eight responses and, in general, are adequate. All scales except V and VI essentially make bipolar distinctions and the reliabilities are sufficiently high to use this instrument on an individual basis for such distinctions. Scale V makes distinctions among four levels and has a sufficiently high reliability that group distinctions can be made in this many levels. Individual distinctions are less certain. Scale VI is not reliable enough to be certain of group distinctions for 9 categories (including an undetermined category). However, the method used for

obtaining reliability estimates for nominal scales is not very powerful. Conclusions drawn from using scale VI should be considered in the light of their reasonableness as well as their stability. Scale VI should be used independently of other scales because of the fact that it significantly correlates with scales I and VII and may contaminate the results if used with these two for interpretive purposes.

Interpretations from Scale VI

The validation studies make it clear that these eight school models form a necessary and sufficient set of expectation typologies to classify most populations. Population differences are interesting; geography teachers are least definable by model, and religious studies teachers are most definable in one high school. The majority of the latter adhere to the Religious model. An overall reduction in the proportion of respondents not defined may occur with increasing teaching experience. High school students show no such phenomenon with age. Female students choose goals which place them most frequently into the Humanizing Model. Male students show no single tendency toward preference.

Different occupational groups tend to display differential model preferences. Social workers, for instance, seem to favour the Collegial model, whereas child care workers in the same residential school for girls favour, in general, the Custodial model (Bolus, 1975). The girls in the school expressed more favourable relationships with the child care workers than with the social workers. The residents were not given the SCHOOLS survey for political reasons. These findings in aggregate attest to the validity of the Carlton-Powell system and give some hints as to its usefulness.

Interpretations Based on Other Scales

In general, systematic differential effects can be found in the educational process when this instrument is used. These effects may be used as indirect evidence for the effectiveness of specific programmes.

When used on a longitudinal basis, changes in attitudes follow logically from systematic characteristics of courses and/ or programs. For instance, if a teacher training program gives considerable theory but fails to supply a large amount of direct practice in applying this theory, then student teachers become significantly more self-protective (scale V) and closed (scale VII) across their training year. Alternatively, to get a significant Openness shift, the combination of theory, practice in simulation, practice in the field plus specific training in observation and testing techniques is needed. Omitting any of these four components from the program maintains the trend, but makes the change not statistically significant. This combination of four elements is not sufficient by itself to make these student teachers significantly more self-development oriented (scale V) although the trend is evident (Powell, 1976). What is needed in the latter case to produce such a change is not yet known. The trend from the procedures reported for scale V suggests that considerable exploratory involvement in the field may be necessary. Other scales

change significantly or show trends that also support the apparent necessity of a multidimensional approach to education in order to produce significant effects.

Where cross-sectional studies are concerned, many interesting findings emerge. Students in high school generally move (on scale V) from self-protection (about 2/3 of grade 9) to self-development orientation (about 2/3 of grade 12). Since both theory and practice are needed for self-developmental orientation to occur, it would seem that most grade 8 students are too young to be expected to make future-oriented decisions. If such decisions are to be made by grade 8 pupils, such is Ontario practice; considerable training and practice in making future-oriented decisions will have to be added to the elementary school program. It is not known for certain how much of this self-development shift is a maturational or a drop-out phenomenon. There are no grade 9 students in level 4 on scale V and about 20 percent of the grade 12 students are at this level. The exact opposite occurs with level 1. However, the decline in level 1 could be from attenuation. A longitudinal study would be necessary to determine these relationships.

Students who opt for work in open areas involving independent study and/or interactive approaches tend to be more open (scale VII) than other students. These differences become significant for those who are involved in both independent study and interactive study programs. It is not known if this openness is a product of the choice factor or of a learning factor. A longitudinal study is necessary in this case, as well. Many other interesting findings have emerged from the cross-sectional study of the secondary school and will be reported separately. "

Although there are similarities between the apparent pattern of scale V (Self-protection; Self-development) and Maslow's hierarchy of needs, this scale seems to be measuring something quite different from the self-actualization measure claimed for Shostrom's (1966) POI. More than half of the POI scales show a positive correlation with scale III (Approach to Authority). Since the positive end of the scale is toward independent action, clearly many scales measure this aspect of attitude. Scale VI (School Model) correlates curvilinearly with the Self-Actualizing Values scale on the POI. The POI, therefore, did not seem to discriminate between self-initiators who are manipulative in intent (Political, Custodial) and those who are facilitative in intent (Collegial, Humanizing). Scale V did not relate to any part of the POI in a manner which supported the construct validity of either instrument. Thus, work with this present instrument seems to support Maslow's general concept of a hierarchy of needs but not Shostrom's operationalization of the concept. This hierarchy seems to be related to the environmental orientation of the learner so far as the results of SCHOOLS is concerned and would seem to be more complex than the POI measures. Other interesting negative and curvilinear relationships were found (Werner & Powell, 1976) which support this last conclusion or, alternatively, challenge the construct validity of SCHOOLS or the precise definition of Maslow's construct depending upon how the data is interpreted. More research in this area is needed to clarify these issues.

Conclusions

The development of an instrument, SCHOOLS I WOULD LIKE TO SEE, to test the validity of a construct derived from Carlton's (1974) seven Popular Images of the Schools would seem to have been accomplished with a reasonable degree of success. The construct seems to be supported to a point where it is probably valid and involves a necessary and sufficient set of categories (with one addition) for the reasonable classification of most populations. The overall construct may give some interesting insights into how the schools might be functioning.

Several attempts at using the instrument produced interesting results, one being that significant differential effects among educational programs have been found in all cases where these effects could be expected. These effects also occurred in directions which make sense with respect to the nature and the structure of these programs. Since differential effects in educational research have rarely been found consistently, the instrument would seem to have promise.

Attempts to confirm the appearance of Maslow's hierarchy in scale V failed to support the construct validity of SCHOOLS or the construct validity of the POI or of the manner in which Maslow describes his hierarchy, whichever point of view one wishes to take. Scale V; however, seems to represent a genuine phenomenon, developmentally and instructionally related. Further research is required to establish the parameters operating in this area. One possible explanation for these negative results arises from the observation that scale V would seem to measure a process, whereas Maslow's self-actualized individual and the POI derived from it would seem to be defining a state of existence. Perhaps states and processes are independent.

The observations give rise to other questions. For instance, do students who do best in a particular class, subject, or program hold views of what a school should be doing similar to those of the teachers involved? Are there particular points of view held by student which predispose them to conflict within the school; to absenteeism; to voluntary or involuntary withdrawal? Are there particular approaches to education which are more suitable for students with particular attitudes? Are there teaching or counselling procedures which can be used to change the attitudes of students from the present attitudes held by disruptive students to 'attitudes which are more productive toward harmony and toward quality achievement?

Are some of these eight approaches to education more useful than others, or does each model have a specific (definable) place in the educative process? Are there particular teacher attitudes which are counter-productive to effective education in a general sense or in a particular setting sense?

Concerning the school and the community: is the school giving the community the kind of education seen as necessary or desirable by the community being

served? Are the conflicts between the school and the community, at least in part, a product of differing perceptions of the role the school should play? Should educators assess and try to meet community attitudes, should they try to influence community opinion toward more appropriate objectives for the schools, or should they do both?

Do board members, school officials, etc., hold views of education which are appropriate to the optimal development of the system as a whole? What kinds of human and other resources are needed to operationalize any or all of these models which seem to be appropriate within a school system? How might conflicting objectives be resolved in such a way that needs are met in some rational manner?

All of these questions and many others may be open to exploration by using the SCHOOLS opinion survey. These data are easily and quickly collected, but a computer program is required to score the questionnaire if large numbers of the opinionnaires are collected.

It is hoped that this instrument continues to sustain its initial promise as a useful tool for the exploration of education problems. Inquiries concerning research use of the instrument are welcome.

References

- Bolus, C. R. A proposed model treatment program for the Province of Ontario based upon a study of Maryvale-A treatment centre for emotionally disturbed adolescent girls. Unpublished doctoral dissertation, Wayne State University, 1975.
- Carlton, R. A. Popular images of the school. *Alberta Journal of Educational Research*, 1974, 20 (1), 59-74.
- Guttman, L. A basis for scaling qualitative data. *American Sociological Review*, 1944, 9, 139-150.
- Maslow, A. H. *Toward a psychology of being*. 2nd Ed. New York: Van Nostrand, 1968.
- Powell, J. C. *Manual for Schools I Would Like to See*. Windsor: Privately published, 1975.
- Powell, J. C. Validation of a teacher evaluation instrument. Paper presented to the annual convention of the Ontario Educational Research Council, December, 1976.
- Shostrom, E. L. *Personal Orientation Inventory (POI)*. San Diego: Educational and Industrial Testing Service, 1966.
- Spears, H. Kappans ponder the goals of education. *Phi Delta Kappan*, 1973, 55 (1), 29-32.
- Werner, R. E., & Powell, J. C. The Personal Orientation Inventory compared with an independent source: Characteristics each scale measures. Unpublished Research Report. University of Windsor, 1976.